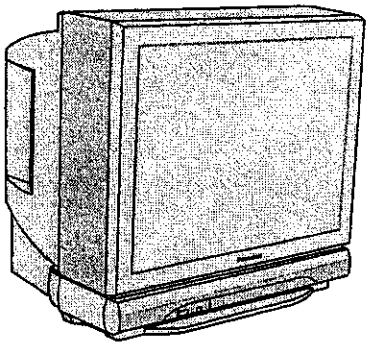

Panasonic®

Colour Television
Operating Instructions

Model No. **TX-29P250X TC-29P250H**
TX-68P250Z TC-34P250H
TX-80P250Z

[tau]
FLAT
DIGITAL

This is a combined Operating Instruction manual for all the above series of models.

Please read these instructions before opreting your set and retain them for future reference.

TQB4G0909

Dear Panasonic Customer

Welcome to the Panasonic family of customers. We hope that you will have many years of enjoyment from your new colour television set. To obtain maximum benefit from your set, please read these Instructions before making any adjustments, and retain them for future reference. Retain your purchase receipt also, and note down the Model Number and Serial Number of your set in the space provided on the rear cover of these Instructions.

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⚠Battery cautions

The incorrect use of batteries can cause electrolyte leakage which will corrode the Remote Control or cause the batteries to burst.

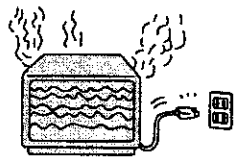
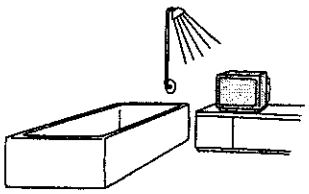
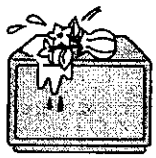
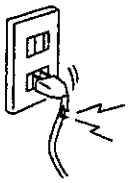
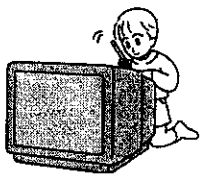
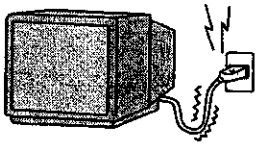
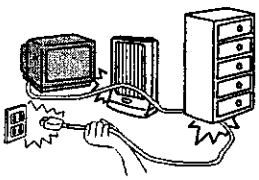
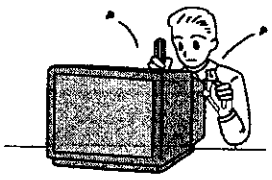
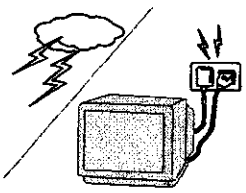
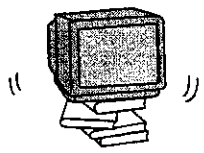
Replace both batteries at the same time.

Don't mix battery types
(alkaline with carbon zinc, etc.)

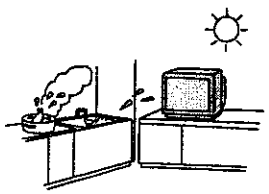
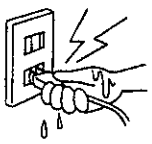
Don't Recharge.

Warnings and Cautions

⚠Warnings

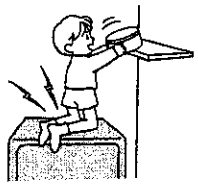
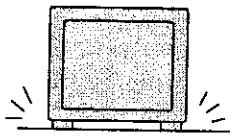
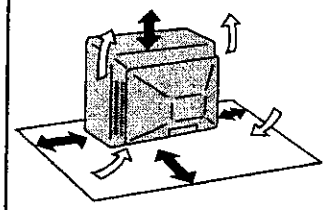
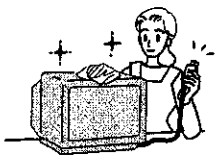
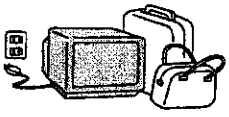
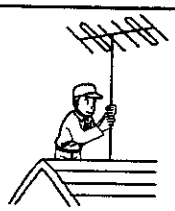
	Unplug the power cord in the event of any malfunction (screen goes blank, no sound, odd sounds, smoke or unusual odors coming from the unit). Unplug the power cord if foreign matter or water falls into the unit, or if the unit is dropped or the cabinet is damaged.		DO NOT use this unit near water. (near a bath tub, etc.)
	DO NOT place any of the following on the unit: Flower vases, flower pots, cups, small metal objects, or cosmetics containers, chemicals or water.		DO NOT use if the power cord or power plug is damaged, or if the plug does not fit tightly into the socket.
	DO NOT insert foreign objects (metal or easily flammable objects).		DO NOT use at a voltage other than indicated
	TAKE CARE NOT to damage the power cord.		DO NOT remove the rear cover as live parts and High Voltage components are accessible when the rear cover is removed.
	DO NOT touch the aerial cable and this unit when there is lightning.		DO NOT place in an unstable location

⚠Cautions

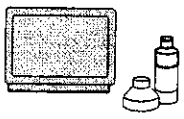
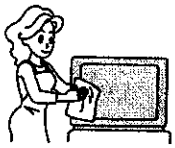
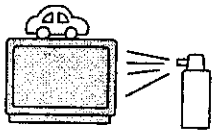
	DO NOT place in humid or dusty location, or areas exposed to smoke or steam. DO NOT place in direct sunlight and other sources of direct heat.		DO NOT touch the power plug if your hands are wet.

Warnings and Cautions

⚠Caution

	DO NOT stand, or place heavy objects on the unit. Particular care should be taken by families with small children.		Place in a safe location.
	Adequate ventilation is essential to prevent failure of electrical components, we recommend that a gap of at least 10cm(⟷) is left all around this unit even when it is placed inside a cabinet or between shelves.		Turn the power "Off" before connecting other electrical equipment.
	Before cleaning, unplug the power plug from the socket.		DO NOT joint the unit.
	Unplug the power plug from the socket if you are not going to use the unit for an extended period.		Ask your sales outlet to install the aerial.

Cleaning

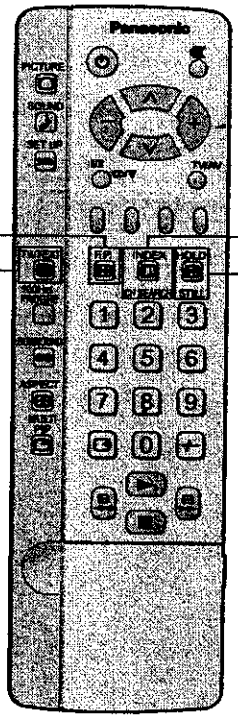
	The unit contains many plastic parts. For this reason DO NOT use benzine, thinner or other chemicals to clean the unit.		Dust will accumulate on the picture screen. Please wipe with a soft cloth from time to time. If you use a chemically treated cloth, please be careful to follow the instructions that come with the cloth.
	DO NOT bring into contact with insecticide or other volatile substances. DO NOT allow the unit to come into contact for extended periods with rubber or vinyl products.		Remove dirt and soiling by wiping with a light cloth. Even if the unit is heavily soiled, do not apply cleaner directly to the unit. Soak a cloth in a solution of neutral cleanser thinned with water. Then wring out the cloth, wipe the unit clean, and finish by wiping with a dry cloth.

Before Operating This Set

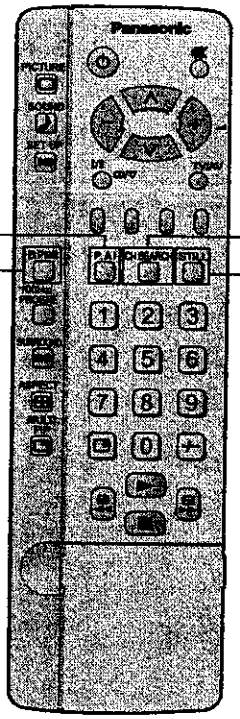
How to Use This Manual

1.Check the Model Number of your TV set; the Model Number is shown on the rear cover name plate on the set. Use the table on the opposite page to confirm which features your particular Model is equipped with.This will help you to known which sections of the manual apply to your set.
2.Check the Part Number on the rear of your Remote Control handpiece, and note the functions available, as shown below.

TX-29P250X
TX-68P250Z
TX-80P250Z



TC-29P250H
TC-34P250H

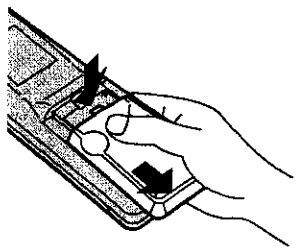


Note:
• Mainly the remote control for TX-29P250X, TX-68P250Z, TX-80P250Z is used as an example in the Operating Instructions.

Battery Installation

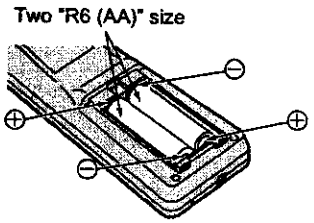
1

Open the cover.
Apply slight downward pressure while pulling towards the bottom.



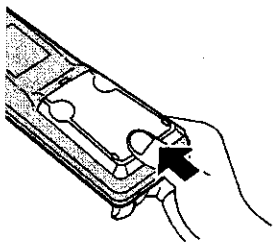
2

Batteries: Use two "R6 (AA)"size batteries.
Insert the batteries ensuring correct polarity. This is identifiable by the "+" and "–" symbols on both the batteries and inside the battery compartment.



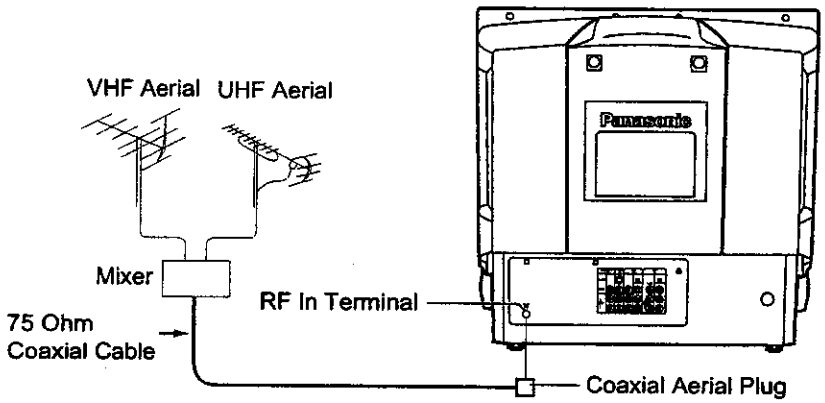
3

Replace the cover, and slide in reverse until the lock snaps.



Do not use rechargeable (Ni-Cd) batteries.
They are different in shape and performance and may fail to ensure correct operation.

Connecting the Aerial cable to the RF In Terminal

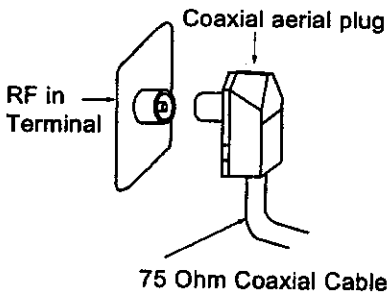


To obtain optimum quality picture and sound, an Aerial, the correct cable (75 Ohm coaxial) and the correct terminating plug are required.

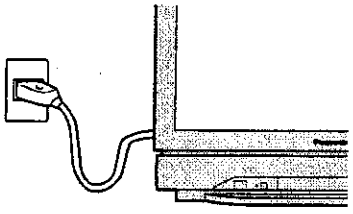
If a communal Aerial system is used, you may require the correct connection cable and plug between the wall Aerial socket and your television receiver.

Your local Television Service Centre or Dealer may be able to assist you in obtaining the correct Aerial system for your particular area and accessories required.

Any matters regarding Aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of you, the Customer.



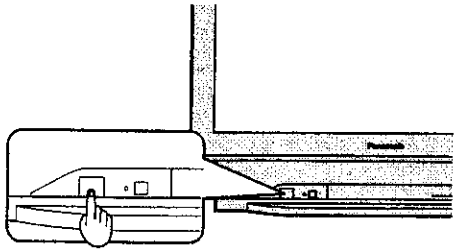
Connecting the Plug to the Wall outlet



Note:

- Mains plug types vary between countries. The mains plug shown at left may therefore not be the type fitted to your set.

How to turn the Power On

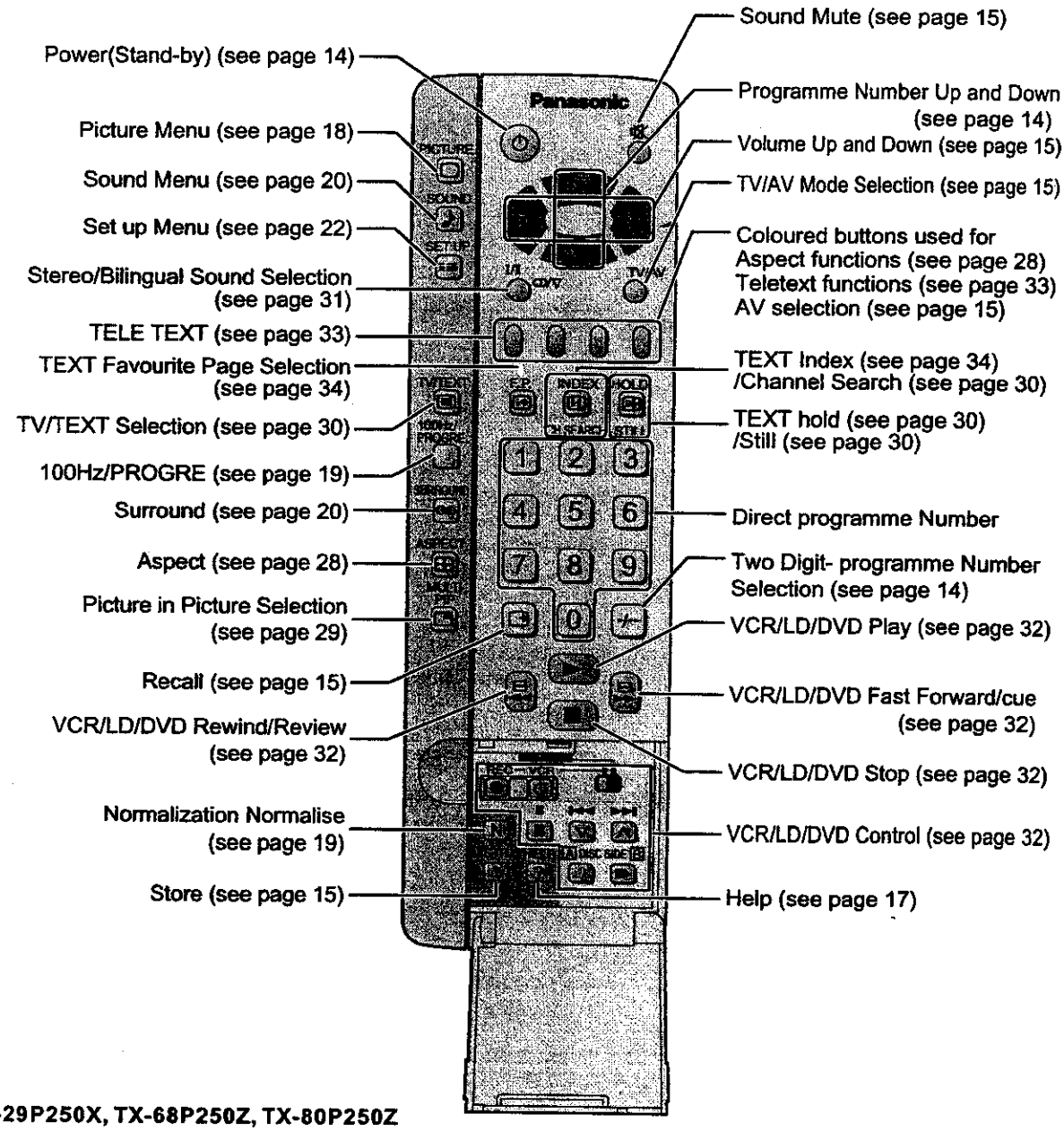


Press the Power switch on Television to turn the set on. (See page 14)

Location of Controls

Remote Control

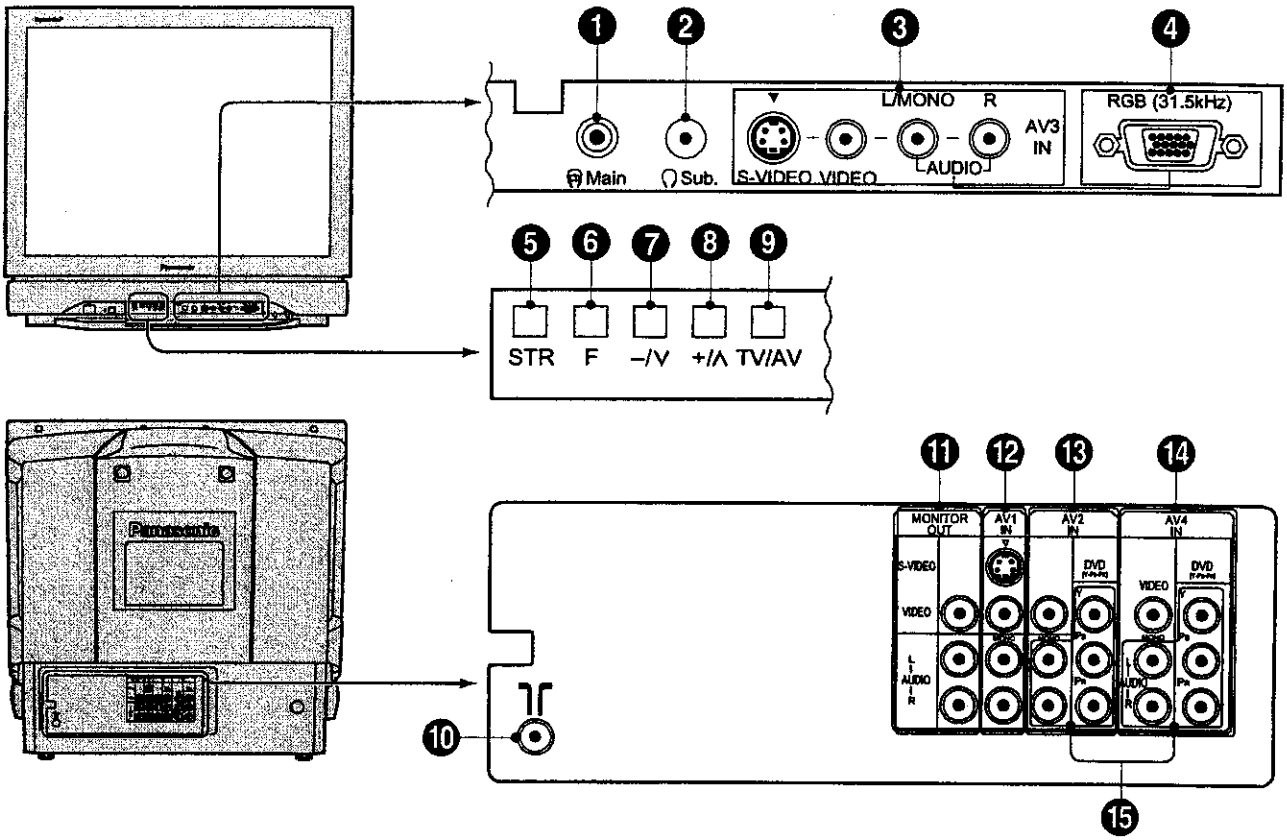
TX-29P250X, TX-68P250Z, TX-80P250Z


Power(Stand-by) (see page 14)
Picture Menu (see page 18)
Sound Menu (see page 20)
Set up Menu (see page 22)
Stereo/Bilingual Sound Selection (see page 31)
TELE TEXT (see page 33)
TEXT Favourite Page Selection (see page 34)
TV/TEXT Selection (see page 30)
100Hz/PROGRE (see page 19)
Surround (see page 20)
Aspect (see page 28)
Picture in Picture Selection (see page 29)
Recall (see page 15)
VCR/LD/DVD Rewind/Review (see page 32)
Normalization Normalise (see page 19)
Store (see page 15)
Sound Mute (see page 15)
Programme Number Up and Down (see page 14)
Volume Up and Down (see page 15)
TV/AV Mode Selection (see page 15)
Coloured buttons used for Aspect functions (see page 28) Teletext functions (see page 33) AV selection (see page 15)
TEXT Index (see page 34) /Channel Search (see page 30)
TEXT hold (see page 30) /Still (see page 30)
Direct programme Number
Two Digit- programme Number Selection (see page 14)
VCR/LD/DVD Play (see page 32)
VCR/LD/DVD Fast Forward/cue (see page 32)
VCR/LD/DVD Stop (see page 32)
VCR/LD/DVD Control (see page 32)
Help (see page 17)

TX-29P250X, TX-68P250Z, TX-80P250Z

Location of Controls

Controls and Terminals on the TV



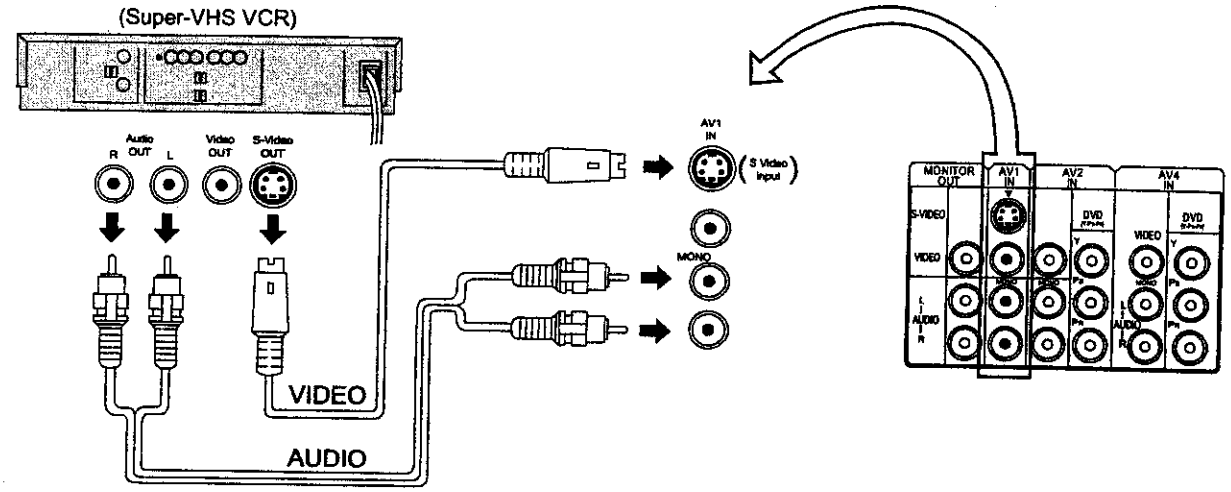
Item No.	Function	Refer to Page
1	Main Headphones Jack	13
2	Sub Headphones Jack	13
3	AV3 Input Terminals	10
4	RGB Input Terminal	12
5	STR	15
6	Function	15
7	Volume Down (–) / Programme Number Down (∨)	14
8	Volume Up (+) / Programme Number Up (∧)	14

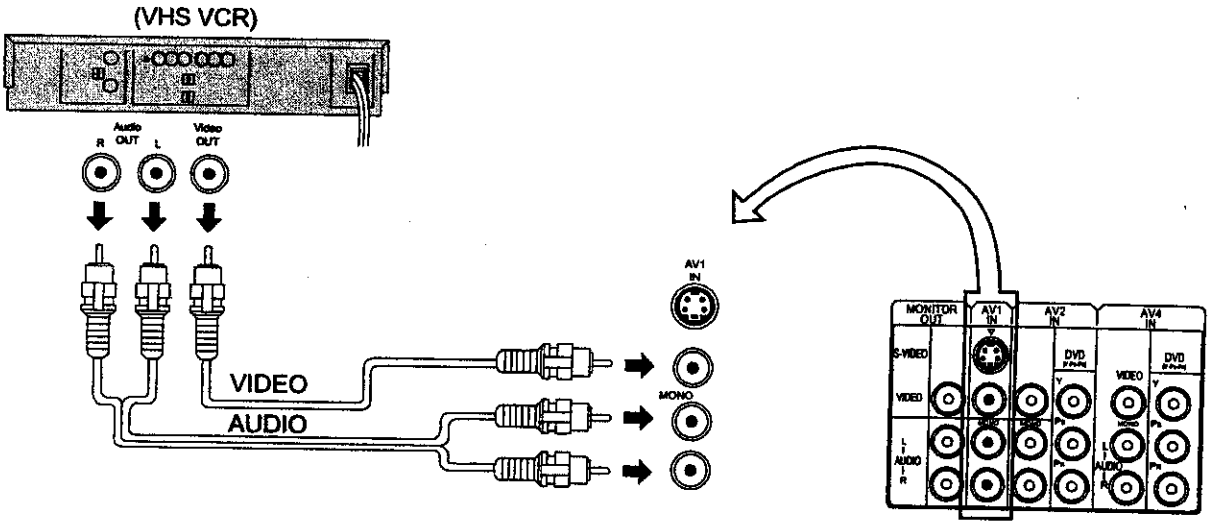
Item No.	Function	Refer to Page
9	TV/AV Selection	15
10	Aerial Terminal (RF In Terminal)	7
11	Monitor Output Terminals	11
12	AV1 Input Terminals	10
13	AV2 Input Terminals	10
14	AV4 Input Terminals	10
15	DVD (Y. PB. PR) Input	11

Connections

How to connect the "AV1, 2, 3 or 4" Input Terminals

Connect VCRs and other peripheral equipment

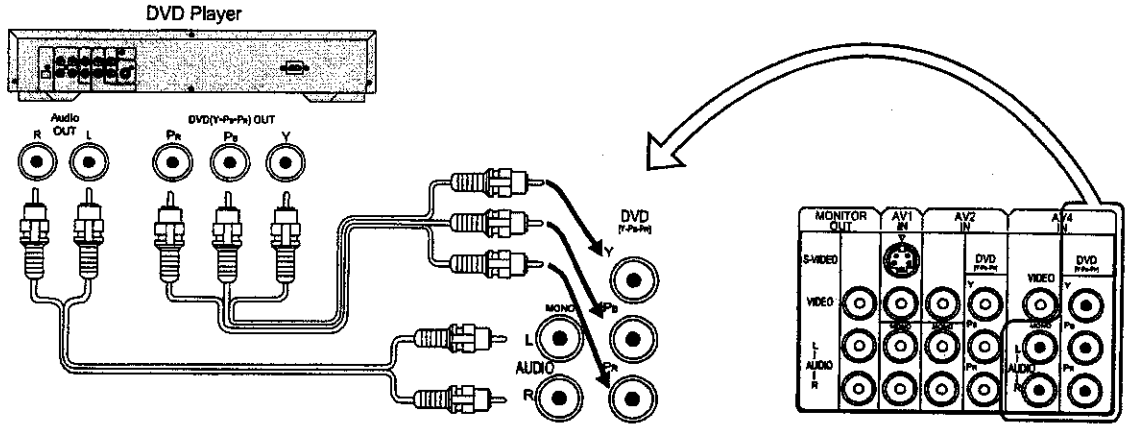




Notes:

- When an S-Video cable is connected to the S-Video terminal, the Video input will be automatically switched off for that AV mode.
- When a Monaural VCR is used, connect the Monaural Audio cable to the Audio "L" (Left) terminal.
- Select the desired AV input position by pressing the TV/AV button. (Refer to page 15)
- Input 3 is located on the front of the unit.
- The AV2 and AV4 audio input terminals serve as the audio input terminal for both the Video input and for the DVD input AV2.

How to connect the DVD Input Terminals

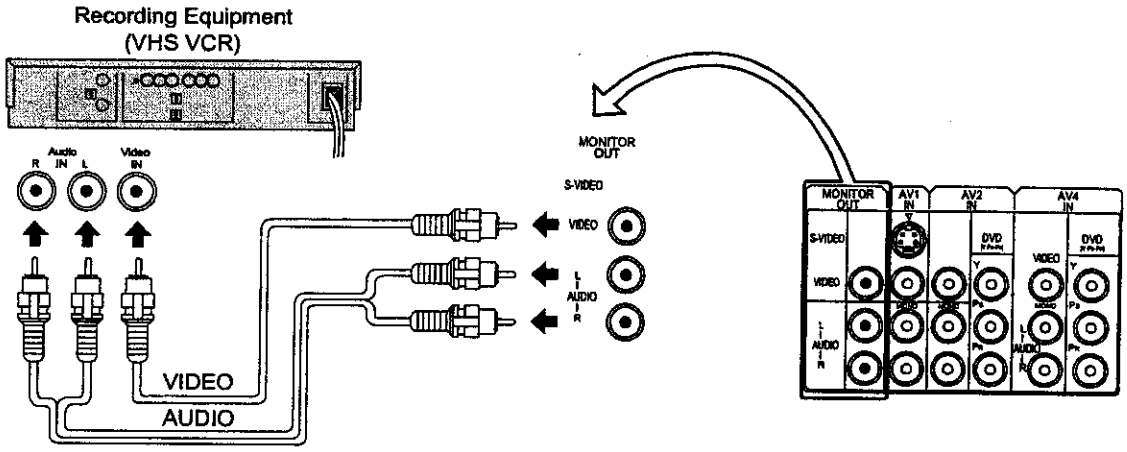


Notes:

- The AV4 audio signal is common for both AV4 and DVD input signal terminals.
- The DVD signal input terminal takes priority over the AV4 video signal input terminal.
- Similar connection are available at the COMPONENT VIDEO input 2 terminal.

How to connect the AV Monitor Output Terminals to other equipment

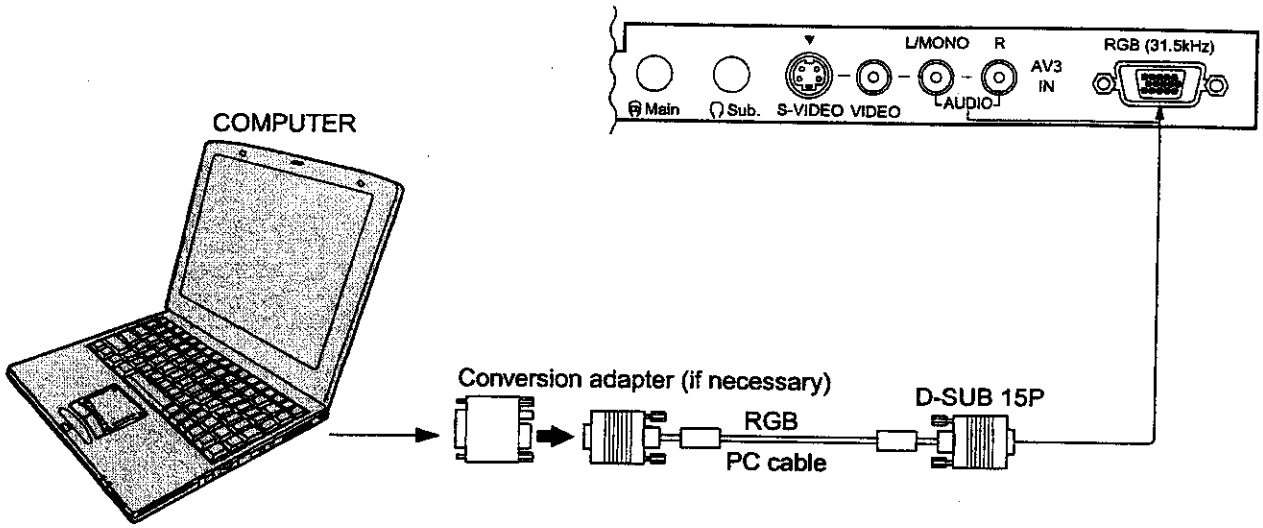
The "Monitor Out" Terminals output the same signals as main picture on the TV screen and sound from the speaker at that time, e.g. TV programmes or signals from AV1, AV2, AV3 or AV4 input.



Notes:

- Never connect the same video recorder with both the VIDEO IN and MONITOR OUT terminals on this TV set, as this could cause incorrect operation.
- The monitor output emits the main picture normal video and audio signals.
- Teletext display on screen will not be output at the MONITOR OUT terminals.
- Even if the television is in picture-in-picture condition, MONITOR OUT terminals output the same signals as main picture on the screen and sound from speakers. Sub picture including strobe, still, channel search, etc. will not be output at the MONITOR OUT terminals.
- The RGB mode signal, and DVD signal (Y, P_B, P_R) are not output at the MONITOR out terminals.

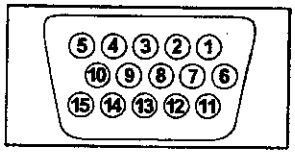
How to connect the RGB Input Terminals



Notes:

- This unit can be connected to PCs with 640 × 480 (31.5 kHz / 60 Hz) or 640 × 400 (31.5 kHz / 70 Hz) pixel.
- In some cases other PCs may not work with this TV set.
- There is no audio signal in RGB input.
- The sound of the RGB mode is combined with the Audio signal of AV3.
- Some PC models cannot be connected to the TV set.
- A commercially sold adapter is required to use the RGB cable (D-sub 15P) to connect a PC-98 series computer (which has a D-sub 15P terminal) or a Macintosh computer to the TV set.
- There is no need to use an adapter for computers with DOS/V compatible D-sub 15P terminal.

■ Signal Names for D-sub 15P Connector

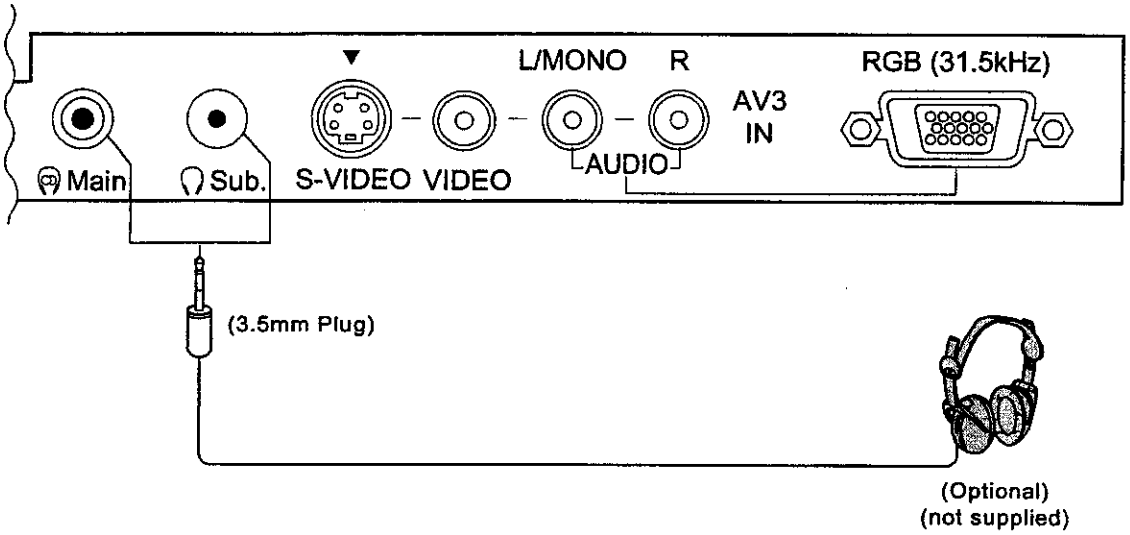


Pin Layout for RGB Input Terminal

Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
①	R	⑥	GND(Ground)	⑪	GND(Ground)
②	G	⑦	GND(Ground)	⑫	NC
③	B	⑧	GND(Ground)	⑬	HD/SYNC
④	GND(Ground)	⑨	NC(not connected)	⑭	VD
⑤	GND(Ground)	⑩	GND(Ground)	⑮	NC(not connected)

Connecting Headphones

Connect headphones as follows.

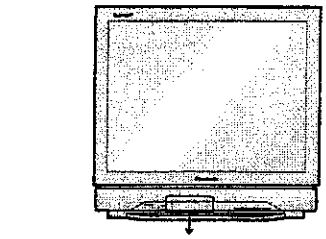


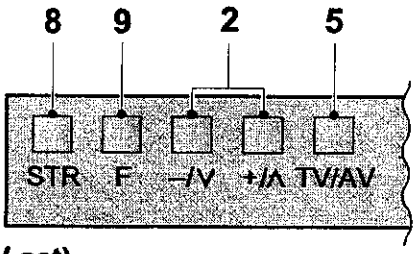
You can listen to sound from each of the headphones plugs as shown below.

Screen condition		Speaker Sound	Main Headphones	Sub Headphones	Monitor Output
Single picture/ Teletext	A	A (Stereo)	A (Stereo)	A (Mono)	A (Stereo)
Picture in Picture	A B	A (Stereo)	A (Stereo)	B (Mono)	A (Stereo)
Picture in Picture/ CHANGE	B A	B (Stereo)	B (Stereo)	A (Mono)	B (Stereo)

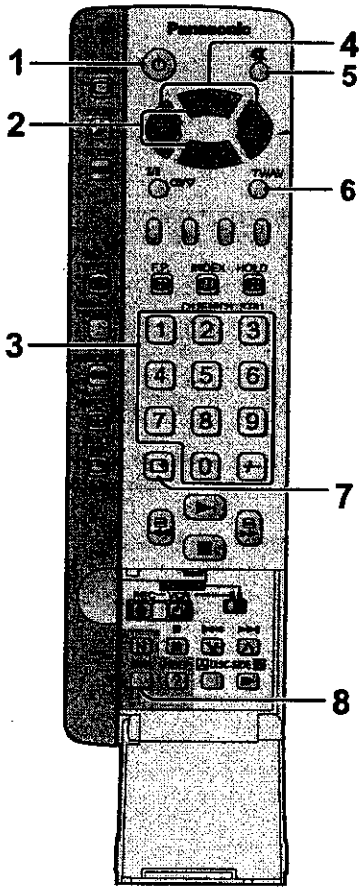
Main Headphones plug:
Use Volume Up "+" or Down "–" Button to control volume level.
Sub Headphones plug:
For the sub Headphones volume control, refer to page 20.

General Operation





(TV set)

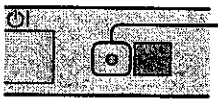


Note:

- Mainly the remote control for TX-29P250X, TX-68P250Z, TX-80P250Z is used as an example in the Operating Instructions.
- The TEXT Operation buttons not present for Models not equipped with certain features.
  The diagram on page 6 identify such variations.

1

How to switch the power ON or OFF
The TV set must first be switched on at the wall outlet and at the Power Switch (refer to page 7).
Press this button to turn the TV set ON, from STANDBY mode.
Press it again to turn the TV set OFF, STANDBY mode.



Power-Ingicater
STANDBY – RED
Power ON – No light up

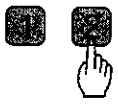
Note:

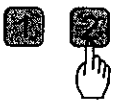
- It is also possible to turn the TV set on STANDBY by pressing the "Direct Programme Number Selection" Buttons (0-9) and the "Programme Number Up or Down" Button, either on the set or on the Remote Control.

2

Programme Number Selection
Press the Programme Number Up "Λ" or Down "V" Button to select the next higher or lower Programme number.

3





Direct Programme Number Selection (CH SELECT = POSITION)
You can select the numbers directly by pressing "Number 0-9" button and the two digit Numbers by pressing "Two Digit" and "Programme Number" buttons.

Programme Number 8 ..... 0 8
Programme Number 12..... 0 1 2

Direct Programme Number Selection (CH SELECT = DIRECT)
You can select the number directly by pressing the corresponding programme number button.

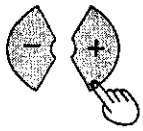
Programme Number 8..... 8
Programme Number 36..... 3 6
Programme Number 124... 1 2 4

Note:

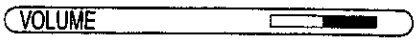
- When the Skip setting for Programme Number 100 through 125 is on, the channel selection time will be shortened, and thus you can not input three digits at a time.

General Operation

4



Volume Adjustment
Press the Volume Up "+" or Down "–" Button to increase or decrease the sound volume level.



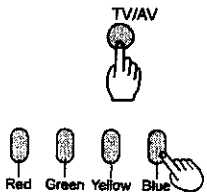
5

Mute Button
Press this button to mute the sound completely.
The "Mute" symbol will appear.

Press the button once again to restore the previous sound level, and cancel the mute.

6

TV/AV Mode Selection
Press the TV/AV button to select TV, AV1, AV2, AV3, AV4, RGB input signal modes sequentially.



Remote control :
Press the TV/AV button to display AV1 - AV4 at the bottom of the screen. Each coloured button corresponds with each input. For example, pressing the Red button selects AV1.

7

Recall Button
Press the Recall button to display the current system status, for example, Programme number, Channel number, Stereo mode, Aspect mode, Picture menu, Sound menu, Scan mode and Sound system.

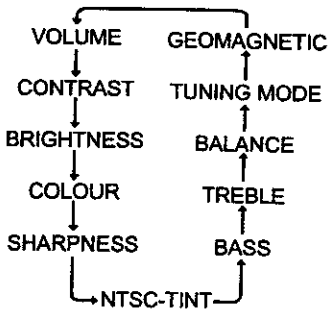
8

STR
Unit :
Used to store tuning and other function settings. Also used to start the menu demonstration.

Remote control :
Stores some settings in TUNING menus.

9

Function selection
Displays the on screen display functions, use repeatedly to select from the available functions.
The following adjustments can be accessed directly.

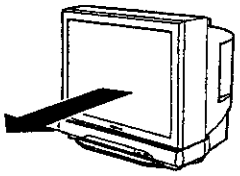


Notes:
- NTSC-TINT : Displayed when receiving NTSC signals.
- TUNING MODE : Not displayed during AV mode.
- BALANCE : Not displayed during SURROUND on.

Geomagnetic Correction

Slight tilting of the picture may be noticeable or coloured patches may sometimes appear at the corners of the screen (colour purity). The Geomagnetic Correction feature can be used to eliminate them, if necessary.

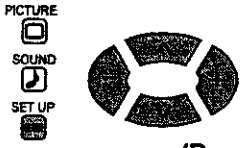
The power should be off when determining the installation location and direction.
At this time please verify what direction the TV screen is to face (direction indicated by the arrow).
Press the main power switch.



Power ON

Geomagnetic corrections can be made from the remote control or the TV set.

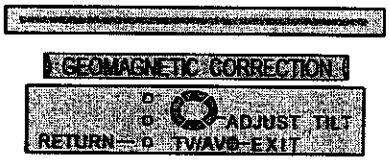
Operation from remote control



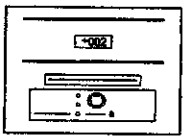
(Remote Control)

1.Press the SET UP button.

2.Select the Geomagnetic correction menu by pressing .



3.Press or to adjust the picture tilt or coloured patches as necessary.



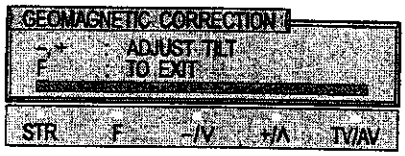
4.Press the TV/AV button to exit the Geomagnetic correction menu.

Normal Viewing

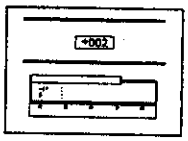
Operation from the TV

(TV set)

1.Press the F (FUNCTION) button to access the Geomagnetic correction menu.



2.Press or to adjust the picture tilt or coloured patches as necessary.



3.Press the F(FUNCTION) button to exit the Geomagnetic correction menu.

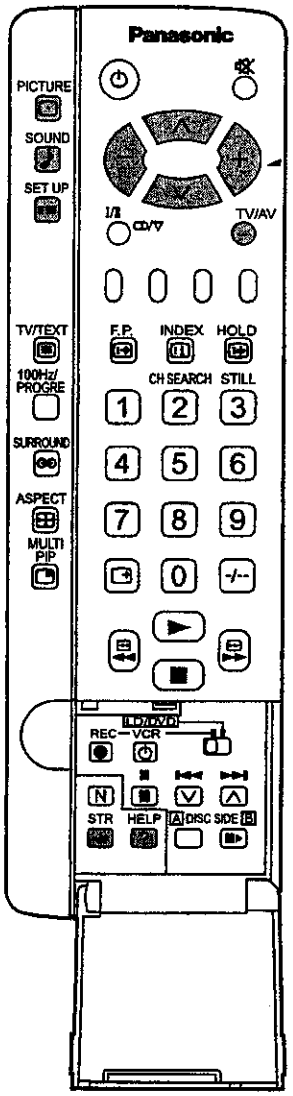
Normal Viewing

Helpful Hint

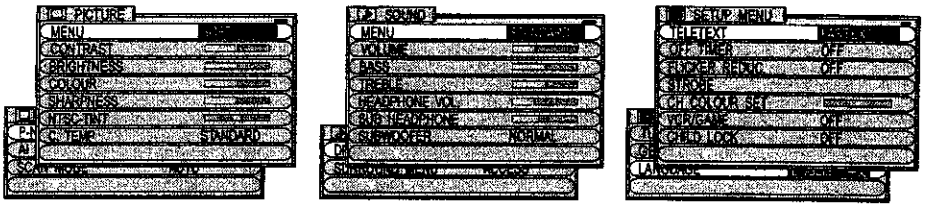
1. If geomagnetic changes still cause colour patches on the screen even after the TV is installed, turn the power off and turn back on again after about 30 minutes.
2. Adjustment for geomagnetism should be performed every time the location of the TV is changed.
3. In some cases colour patches will not be completely eliminated even after adjustment, particularly in ferro-concrete buildings and other structures susceptible to geomagnetism. In these cases adjust by changing the installation location.

Using the On Screen Displays

Many features available on this TV can be accessed via the On Screen Display menu system. Use the remote control as shown below to access and adjust features as desired.



The **PICTURE**, **SOUND** and **SET UP** buttons are used to open the main menus and also to return to the previous menu



ex. AV mode : COLOUR SYS is not displayed.

The UP and DOWN cursor buttons are used to move the cursor up and down the menus.

The LEFT and RIGHT cursor buttons are used to access menus, adjust levels or to select from a range of options.

STR

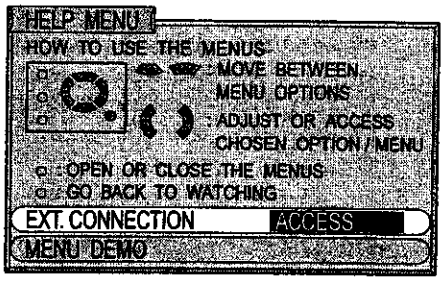
The **STR** button is used with a number of features to store settings after adjustments have been made or options have been set.

TV/AV

The **TV/AV** button is used to exit the menu system and return to the normal viewing screen.

HELP

The **HELP** button runs a demonstration of on screen display menus available.
Press the **HELP** button and select one of the options

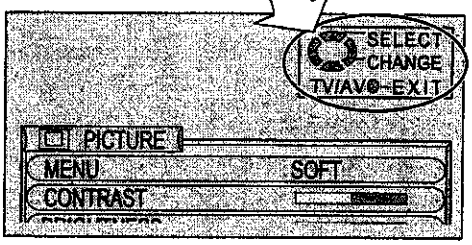

HELP MENU
HOW TO USE THE MENUS
: MOVE BETWEEN MENU OPTIONS
: ADJUST OR ACCESS CHOSEN OPTION / MENU
: OPEN OR CLOSE THE MENUS
: GO BACK TO WATCHING
EXT. CONNECTION ACCESS
MENU DEMO

An On Screen Help box is displayed whenever a menu is displayed on the TV. This Help box indicates which keys on the remote control are used to navigate the menu shown, see above for descriptions of button functions.

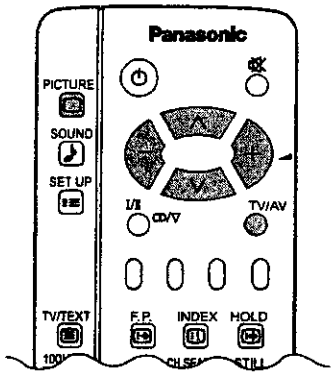
Note:

- The Help box is not shown in the menu pictures in this instruction book due to space limitations.

ON SCREEN HELP
'Instruction' box



Picture Menu



1 Press PICTURE.

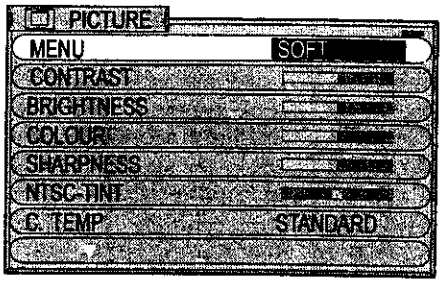
2 Move to chosen menu option by using ∧ or ∨.

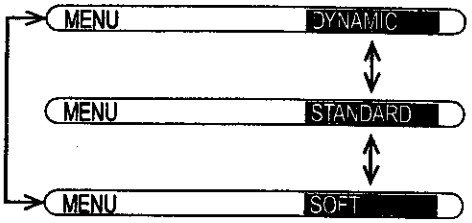
3 Adjust chosen option or access chosen menu by using − or +.

Press TV/AV at any time to go back to watching TV.

MENU

You can change the level of each Function (COLOUR, NTSC-TINT, BRIGHT, CONTRAST, SHARPNESS) for each Picture Menu. Picture menu mode will be memorized for each TV, AV1, AV2, AV3 and AV4 mode.

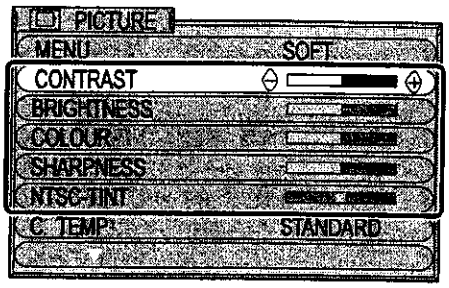




Picture Menu	Function
DYNAMIC	For viewing in brighter environments. This menu selects a higher than normal levels of Brightness and Contrast.
STANDARD	For viewing in normal (evening lighting) environments. This menu selects the normal levels of Brightness and Contrast.
SOFT	For viewing in a dark room. This menu selects reduced levels of Brightness and Contrast.

CONTRAST, BRIGHTNESS, COLOUR, SHARPNESS, NTSC-TINT

Increase or decrease the levels of CONTRAST, BRIGHTNESS, COLOUR and SHARPNESS options according to your personal preference. With an NTSC-TINT signal source connected to the TV, the picture hue can be adjusted to suit your taste.



Item	Effect	Function
CONTRAST	− +	Adjust for contrast.
BRIGHTNESS	− +	Adjusts for easier viewing of dark pictures such as night scenes and hair.
COLOUR	− +	Adjusts slightly to a lighter colour.
SHARPNESS	− +	Displays a sharp image.
NTSC-TINT	− +	Adjust for proper skin colour.

Notes:

- When set to Multi PIP mode, the main and sub pictures are both adjusted simultaneously.
- When the TV is receiving NTSC signals, NTSC-TINT is displayed and level adjustment would be possible.
- Only CONTRAST and BRIGHTNESS will be displayed during RGB connection.
- Only CONTRAST will be displayed during TEXT mode.

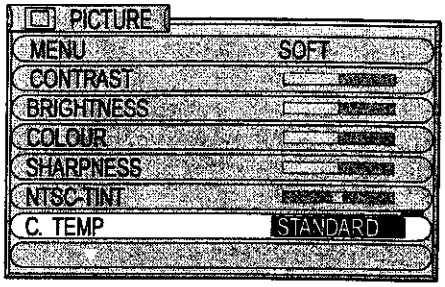
Picture Menu

C. TEMP
(Colour Temperature)

Allows you to set the overall colour tone of the picture.

Press − or + to switch between modes

→STANDARD ⟷ WARM ⟷ COOL←



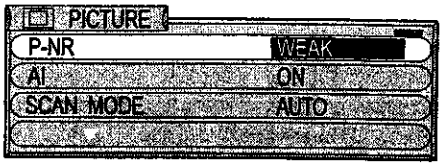
P-NR
(Picture Noise Reduction)

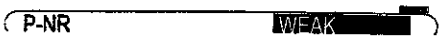
Automatically reduces unwanted picture noise.

Press − or + to switch between modes

→ OFF ⟷ STRONG ←
→ AUTO ⟷ WEAK ←

TC-29P250H, TC-34P250H switching is also possible using D.NR on the remote control

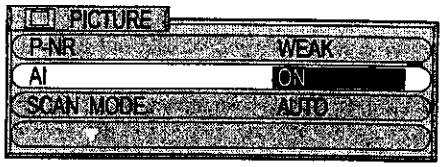


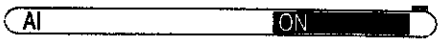


AI

Automatically analyses the incoming picture and processes it to give improved contrast and optimum depth of field.

TC-29P250H, TC-34P250H switching is also possible using P.AI on the remote control



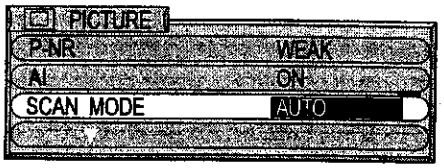


SCAN MODE

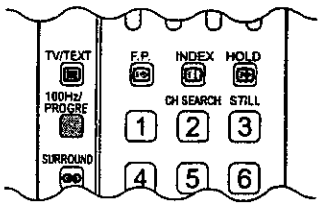
Lets you choose the screen refresh method:

Press − or + to switch between modes

→AUTO ⟷ 100 Hz MODE ⟷ PROGRESSIVE←



MODE	Function
AUTO	The TV software will select the best mode for the signal being viewed.
100 Hz MODE	100Hz will give a steady picture for most signal transmission.
PROGRESSIVE	Recommended when receiving NTSC signals.



Swtiching is also possible using 100Hz/ PROGRE on the remote control.

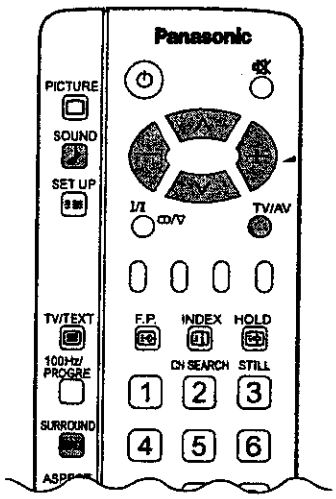
Note:

- We recommend that you set **Scan mode** to **Progressive** when viewing a PAL 60 or NTSC transmission. When viewing a PAL transmission (other than PAL 60) with **Scan mode** set to **Progressive**, the screen will flicker, this is not a fault.

Helpful Hint (N Normalization)

By pressing the Normal "N" Button on the Remote Control while the Picture menu is displayed, the selected menu will be changed to the Normal Mode.
Normalization will not occur if the menu is not displayed when the "N" Button is pressed.
The Normal mode is the factory preset condition. Returning to this original condition is called "Normalization".

Sound Menu



1 Press SOUND.

2 Move to chosen menu option by using ∧ or ∨.

3 Adjust chosen option or access chosen menu by using − or +.

The Sound menu screen consists of 2 pages.
Use ∧ and ∨ to change pages.

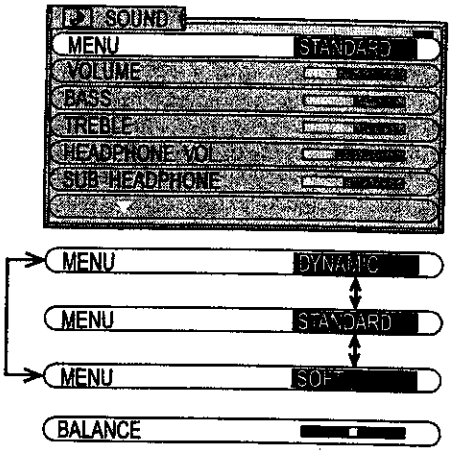
Press TV/AV at any time to go back to watching TV.

Some features are only available with the Surround feature switched off.
Press SURROUND to switch between On and Off.

MENU

You can change the level of each Function (BASS, TREBLE) for each Sound Menu.
Sound menu mode will be memorized for each TV, AV1, AV2, AV3 and AV4 mode.

Sound Menu	Function
DYNAMIC	Amplifies the Low frequencies and outputs optimum sound. For music programmes for example.
STANDARD	For Normal use.
SOFT	Human voices (middle pitch sounds) will sound more clear.



The BALANCE for Sound Operation is displayed when Surround is turned OFF.

VOLUME, BASS, TREBLE, BALANCE, HEADPHONE VOL., SUB HEADPHONE

Item	Effect	Function
VOLUME	− +	Adjusts output volume.
BASS	− +	Adjusts low sounds.
TREBLE	− +	Adjusts high sounds.
BALANCE	− +	Adjust left and right volumes.
HEADPHONE VOL.	− +	Adjust Headphone volume.
SUB HEADPHONE	− +	Adjust Sub Headphone volume.

Notes:

- When set to Multi PIP mode, the main and sub sound are both adjusted simultaneously.
- When using one of the double window features, note that the headphones will relay the soundtrack for the programme in the main window, not the smaller window.

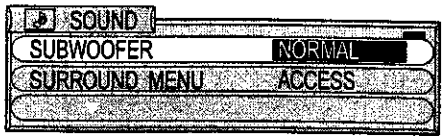
Sound Menu

SUBWOOFER

Press − or + to switch between modes

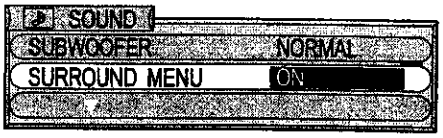
→ OFF ⟷ NORMAL ⟷ FULL ←

Off turns off subwoofer output, Normal provides a mid-level bass output and Full provides an enhanced bass effect.



SURROUND MENU

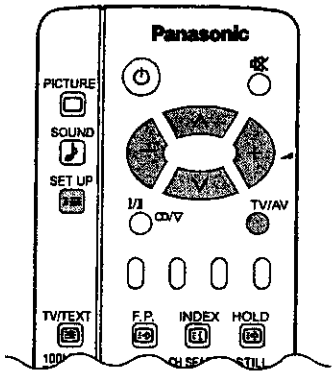
Press − or + to select SURROUND MENU.



Helpful Hint (N Normalization)

By pressing the Normal "N" Button on the Remote Control while the Sound menu is displayed, the selected menu will be changed to the Normal Mode.
Normalization will not occur if the menu is not displayed when the "N" Button is pressed.
The Normal mode is the factory preset condition. Returning to this original condition is called "Normalization".

Setup Menu



1 Press SET UP.

2 Move to chosen menu option by using ∧ or ∨.

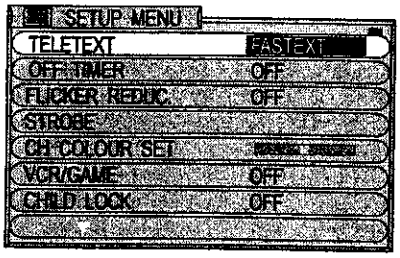
3 Adjust chosen option or access chosen menu by using − or +.

The SET UP menu screen consists of 2 pages.
Use ∧ and ∨ to change pages.

Press TV/AV at any time to go back to watching TV.

TELETEXT (No indication for TC-29P250H and TC-34P250H)

Allows you to choose 2 modes. (See page 38)
LIST ⟷ FASTEXT



OFF TIMER

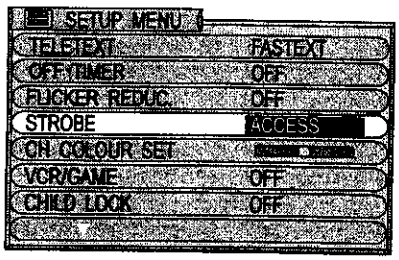
Switches the TV off within a preset time which you can choose from between 0 to 90 minutes in 15 minute intervals.
OFF ⟷ 15 ⟷ 30 ⟷ 45 ⟷ 60 ⟷ 75 ⟷ 90

FLICKER REDUCTION

Lets you control any picture movement. Set to Dynamic to activate motion compensation, to smooth the image and get rid of picture movement. Set to Normal to correct minor picture movement, or if slight ghosting of figures occurs when using the Dynamic setting. Set to Off to have no flicker reduction at all, occasional broadcasts may benefit from using this setting.
OFF ⟷ NORMAL ⟷ DYNAMIC

STROBE

Lets you take a series of freeze-frame photos of a piece of action (for example: the finish of a race). (See page 30)



CH COLOUR SET

Colour density varying between broadcast channels can be adjusted to three levels for each reception channel.

VCR/GAME

Reproduction of irregular signals, such as certain TV games and rental video tapes, may be improved.

TEXT SELECT (No indication for TC-29P250H and TC-34P250H)

Select character set, so that all characters needed are available for text on teletext pages (eg: cyrillic characters, etc).
Mode Languages: ENGLISH/CIS/E.EUROPE

CHILD LOCK

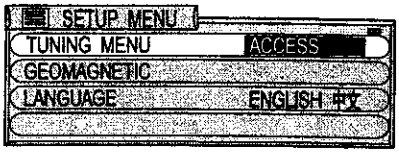
If the Child-Lock function is set ON, picture and sound of the TV/AV mode being viewed will disappear and a Black screen will appear.

COLOUR SYSTEM

During **AV** mode, COLOUR SYSTEM is displayed.
If a clear picture with current colours cannot be obtained when a Broadcast or AV signal is received. The colour system will change as shown.
AUTO ⟷ PAL ⟷ SECAM ⟷ NTSC3.58 ⟷ NTSC4.43

PAL, SECAM and NTSC 3.58 are different colour signal broadcast transmission systems applicable to differing countries NTSC 4.43 is a trick playback mode used in special VCR's to playback NTSC recorded video tapes through PAL television equipment.

Setup Menu



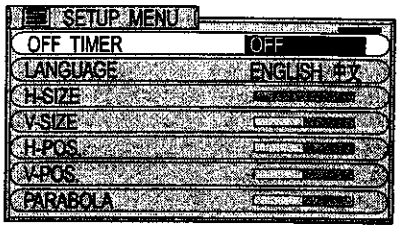
TUNING MENU Provides access to many other features including system select and Auto TUNE. (See page 26)
Not displayed during **AV** mode.

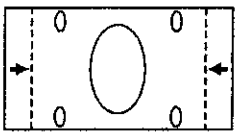
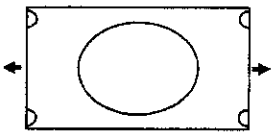
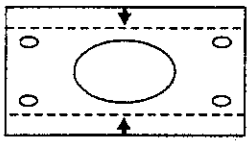
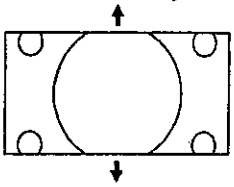
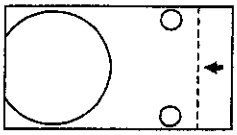
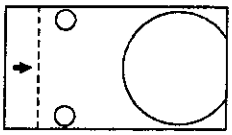
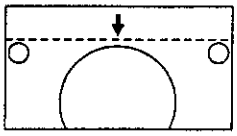
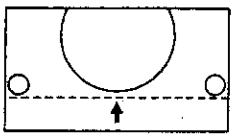
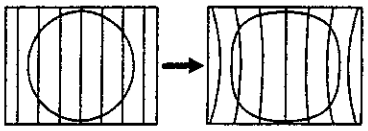
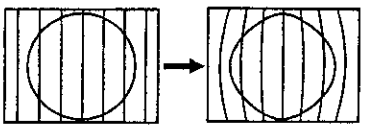
GEOMAGNETIC If you notice a slight tilt to the picture or if there are coloured patches at the corners of the screen, use this feature to eliminate them. (See page 16)

LANGUAGE When you first install the TV, the On Screen Display language is set according to your choice of region. LANGUAGE lets you change the language used for On Screen Displays.

During "RGB" input signal modes.

The right SET UP is displayed during RGB connection. Details on each functions are as follows:

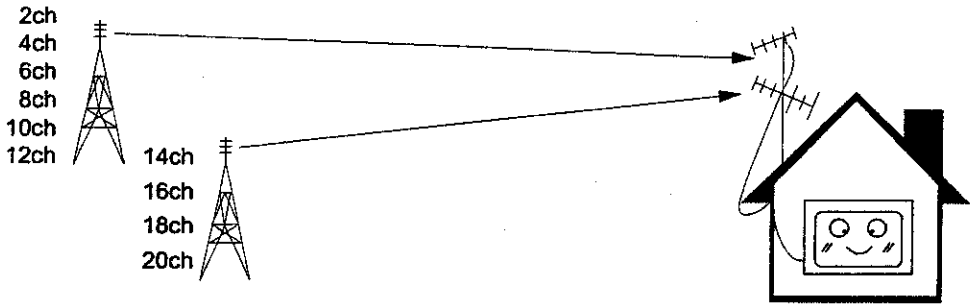


H-SIZE	When the Position ◀ is pressed 	When the Position ▶ is pressed 
V-SIZE	When the Position ▼ is pressed 	When the Position ▲ is pressed 
H-POS	When the Position ◀ is pressed 	When the Position ▶ is pressed 
V-POS	When the Position ▼ is pressed 	When the Position ▲ is pressed 
PARABOLA	When the Position ◀ is pressed 	When the Position ▶ is pressed 

Tuning Menu

Channel Selection

Select the most easily viewed channel selection method.



Example

Programme Number	Channel Display	Received Channel
1	2	2
2	4	4
3	6	6
4	8	8
5	10	10
6	12	12
7	14	14
8	16	16
9	18	18
10	20	20

POSITION SELECT

When the Channel Selection is on POSITION, and Auto Tune is performed, the unit memories the channels Tuned in order from Programme No.1.

Press the button ① to view channel 2.
Press the button ② to view channel 4.
Press the button ③ to view channel 6.

During Position mode various reception channels can be viewed.

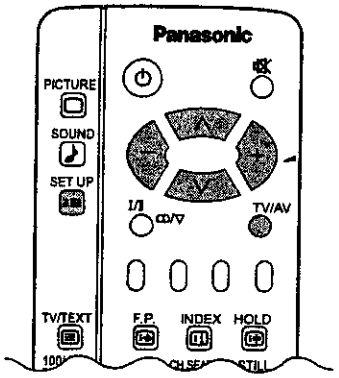
Example

Programme Number	Channel Display	Received Channel
1	–	–
2	2	2
3	–	–
4	4	4
5	–	–
6	6	6
7	–	–
8	8	8
9	–	–
10	10	10
⋮	⋮	⋮
20	20	20
⋮	⋮	⋮

DIRECT SELECT

When the Channel Selection is on DIRECT, and Auto Tune is performed, the unit memories the programme number which is the same as the channel Tuned.
This method allows you to select the desired channel by pressing the channel display number directly on the remote control to select the station. The channel display numbers for the broadcast stations in each region are listed on Page 25.

Tuning Menu



1 Press SET UP.

2 Move to chosen Tuning menu option by using ∧ or ∨.

3 Access Tuning menu by using − or +.

4 Move to chosen menu option by using ∧ or ∨.

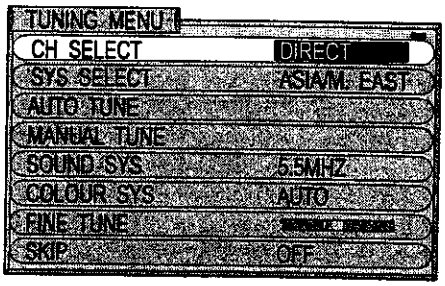
5 Adjust chosen option or access chosen menu by using − or +.

Press TV/AV at any time to go back to watching TV.

Pressing STR after having adjusted a feature will store the setting as the default (replacing the factory setting).

CH SELECT
(Channel Selection)

Select the most easily viewed channel selection method. (See page 24)



SYS SELECT
(System Selection)

Select the system.

CHINA → HK/UK → ASIA/M.EAST → NZ/INDONES → AUSTRALIA
JAPAN → CATV → AMERICA → SPECL VER → E.EUROPE

System Select by Region

SYSTEM SELECT	REGION
CHINA	China
HK/UK	Hong Kong, United Kingdom
ASIA/M.EAST	Malaysia, Singapore, Thailand, Asia countries, Kuwait, Saudi Arabia, United Arab Emirates, Middle East countries, etc.
NZ/INDONES	New Zealand, Indonesia, etc.
AUSTRALIA	Australia
E·EUROPE	CIS, Poland, etc.
SPECL VER	South Africa
AMERICA	U.S.A., Chile, Mexico, Panama, Peru, Philippines, Taiwan, Venezuela, etc.
CATV	USA CATV
JAPAN	Japan

AUTO TUNE

Allows you to automatically retune the TV. Useful if you move house and wish to retune your TV to the local stations. (See page 26)

MANUAL TUNE

Allows individual program positions to be tuned, manually. (See page 27)

SOUND SYS
(Sound System)

You can change the sound system used for a programme channel.
Choose the required sound system:

4.5 MHz ⟷ 5.5 MHz
6.5 MHz ⟷ 6.0 MHz

COLOUR SYS
(Colour System)

Lets you select the correct transmission standard for the transmission signal being received.

FINE TUNE

Use to make small adjustments to the tuning of an individual station (useful for example when weather conditions are affecting reception quality of a program).

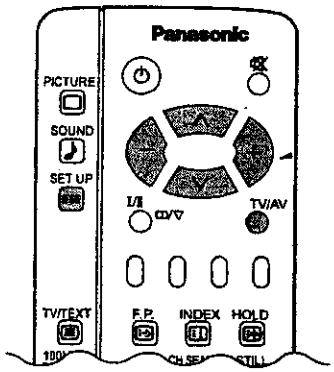
SKIP

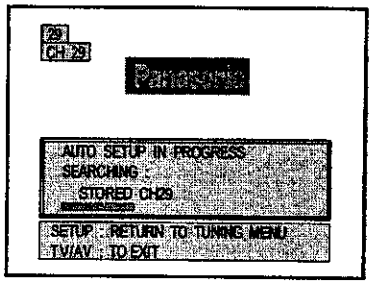
It is possible to skip Program Number on which no TV stations are tuned appearing on the screen. The function is only effective when selecting Program Numbers by pressing the Program Number UP or DOWN button either on the TV set or the remote control.

Tuning Menu

Auto tune

Before Auto tune, set the **"SYSTEM SELECTION"** and **"CHANNEL SELECT"** mode.





1 Press SET UP.

2 Move to chosen menu option by using ∧ or ∨.

3 Access Tuning menu by using − or +.

4 Move to chosen menu option by using ∧ or ∨.

5 Access AUTO TUNE by using − or +.

Notes:

- If you proceed with the next step all tuning data will be erased (all stations and their programme positions stored in your TV's memory will be wiped out so the new settings can be stored).
- If you exit the procedure after this point and before AUTO TUNE is complete, no station information will be stored. Restart and complete the AUTO TUNE procedure so that the TV is re-tuned.

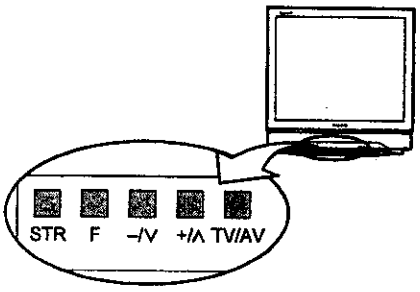
6 Start AUTO TUNE by using − or +.

Once this operation is completed the TV will display the program now stored on programme position 1.

Press TV/AV at any time to go back to watching TV (please read the Note in the above procedure).

Auto tune (via front panel)

It is also possible to use the control panel buttons on the front of the TV to tune individual programme positions



1 Press F (Front panel) until Tuning mode is reached.

2 Press −/V or +/∧ to access Tuning mode.

3 Press F (Front panel) to access Auto tune.

4 Press −/V or +/∧ to start search.

When the desired station is found, press STR to store.
The programme position will flash.
Repeat above procedure to tune additional programme positions.

Press F at any time to exit the Tuning menu.

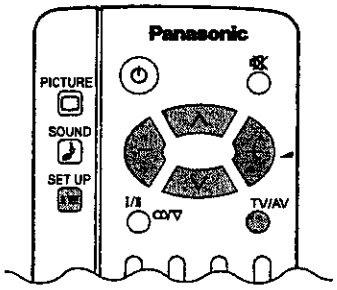
Helpful Hint

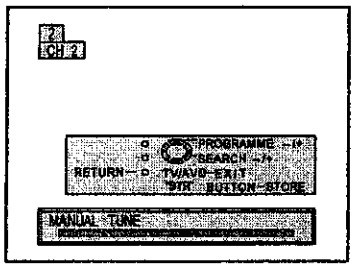
1. If a clear picture with correct colours cannot be obtained when a Broadcast or AV signal is received, refer to the "Colour System Selection" operation on page 25.
2. After the Automatic tune is finished, press the Programme Number "Up" Button to confirm the tuning condition for each Programme Number. If some Programme Numbers are unused, it is possible to skip such Programme Numbers. Please refer to the Programme.

Tuning Menu

Manual tune

Before Auto tune, set the **"SYSTEM SELECTION"** and **"CHANNEL SELECT"** mode.





1 Press SET UP.

2 Move to chosen menu option by using ∧ or ∨.

3 Access Tuning menu by using − or +.

4 Move to chosen menu option by using ∧ or ∨.

5 Access Manual Tune by using − or +.

6 Select the programme position to be tuned by using ∧ or ∨.

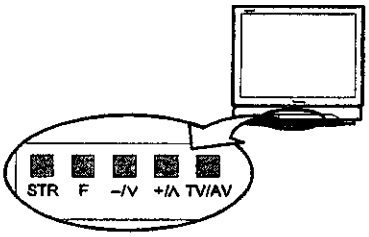
7 Press repeatedly until required station is found by using − or +.

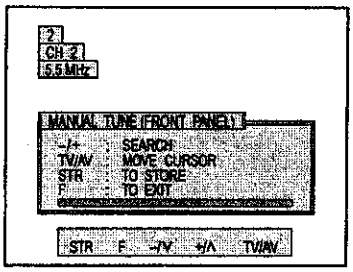
When the desired station is found, press STR to store.
The program position will flash.

Press TV/AV at any time to go back to watching TV.

Manual tune (via front panel)

It is also possible to use the control panel buttons on the front of the TV to tune individual programme positions





1 Press F (Front panel) until Tuning mode is reached.

2 Press -/V or +/Λ to access Tuning mode.

3 Press TV/AV to move between Change programme, Search and Change TV system.

4 Press -/V or +/Λ to change programme position or start search.

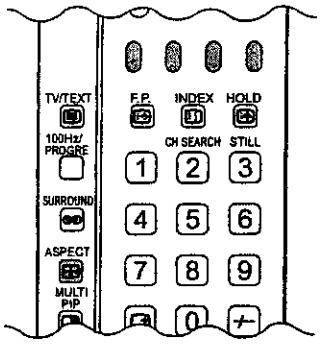
When the desired station is found, press STR to store.
The programme position will flash.
Repeat above procedure to tune additional programme positions.

Press F at any time to exit the Tuning menu.

Helpful Hint

1. If a clear picture cannot be obtained even when a Broadcast or AV signal is received, refer to the "Colour System Selection" operation on page 25.
2. After the Manual tune is finished, press the Programme Number "Up" Button to confirm the tuning condition for each Programme Numbers. If some Programme Numbers are unused, it is possible to skip such Programme Numbers.
3. When using a VCR without video and audio input/output terminals, it is convenient to connect the aerial cable as indicated in the instruction manual of VCR and to set the designated channel to programme No."0". In that case, perform manual tune after setting the colour system and sound system in advance. Further, in multi-system VCR, it is more convenient to set the designated channel to several programme Numbers.

Aspect Controls



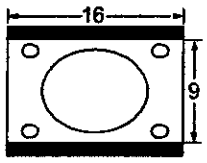
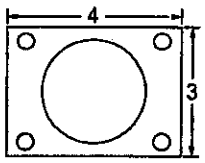
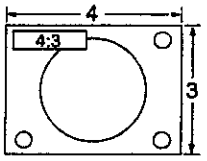
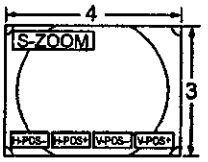
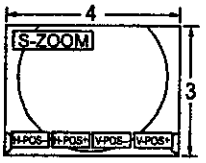
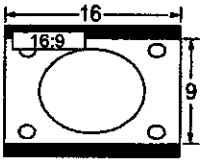
Press ASPECT to move through the aspect options:

4:3 → 16:9 → S-ZOOM → AUTO → 4:3

Notes:

- Simply press ASPECT to display mode information in the top left of the screen.
- 16:9 picture has been used to illustrate all of the aspect modes described in this section.
- During AV mode, AUTO is added to the options displayed above.

The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for some Aspect functions clear after a few seconds. If you want to select an operation when the keys are not shown, press ASPECT once more and the keys will reappear.

Mode	Picture	Explanation
AUTO	 **16:9 Signal**  **4:3 Signal**	When a wide screen signal from the special video is detected by S1-Video Terminal of the unit, the Aspect ratio auto-matically set to 16:9 screen. There is a wide variety of software available with aspect ratios from 1.78:1 (16:9) to 2.35:1 (cinema vision).
4 : 3		4:3 will display a 4:3 picture at its standard 4:3 size without any stretching.
S-ZOOM	 **Zoom**  Blue button has been pressed to move picture upwards	S-Zoom displays the picture at a greater magnification than Zoom mode does. Press the red or green buttons to move the picture horizontally. Press the yellow or blue buttons to move the picture vertically.
16 : 9		16:9 will display the picture at its maximum size but with slight stretching. Black stripes will be visible down the top and bottom of the picture.

Menu Operation

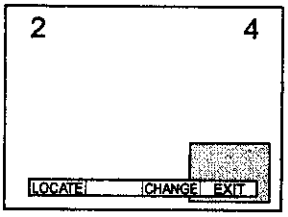
Multi PIP

Press MULTI PIP (whilst the on screen selector keys are on screen) to move between watching the current programme, the **picture in picture** feature, **picture out of picture** and **picture and picture** feature.

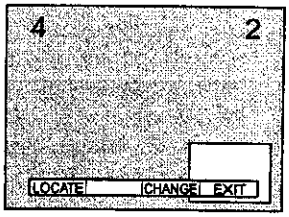
The on screen selector keys (corresponding to the four coloured buttons on the remote control) that appear for the features clear after a few seconds. If you want to select an operation when the keys are not shown, press MULTI PIP once more and the keys will reappear.

Picture in picture

Allows two pictures to be viewed at the same time.
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the main window.



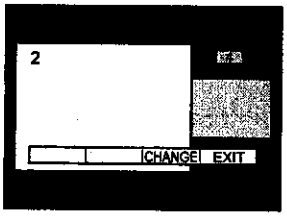
Picture in picture mode



The two programmes have been swapped, the programme in the smaller window has become the main window program.

Picture out of picture

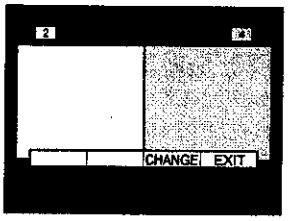
This feature allows two programmes to be viewed at the same time, as **picture in picture** does. The difference is how the two programmes are displayed: in **picture in picture** the smaller window appears within the main image; in **picture out of picture** the smaller window appears to the right of the main image.
Use the remote control to change channel (while the on screen selector keys are still displayed).
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the main window.



Picture out of picture mode

Picture and picture

Allows two pictures to be viewed at the same time.
Press the yellow button to swap the contents of the two windows.
Use the remote control to select a TV channel or an AV source to appear in the left window.



Picture and picture mode

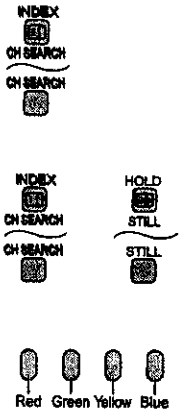
Note:

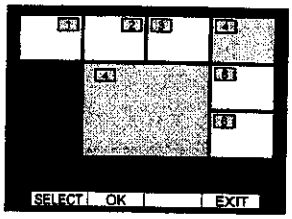
- MULTIPIP operations cannot be made during RGB mode, or progressive signal input (Y, P_B, P_R).

Menu Operation

Channel search

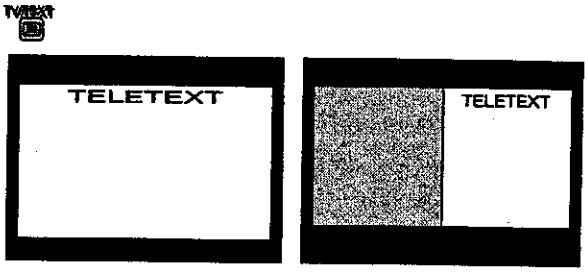
Press INDEX/CH SEARCH (CH SEARCH) to show freeze-frames of the programmes being broadcast on all of the stored channels. These images are displayed in series clockwise around the edge of the screen, starting from the top left.
The current programme is displayed in the centre of the screen, still playing.
The feature cycles through the stored channels until either HOLD/STILL (STILL) is pressed to pause the search or INDEX/CH SEARCH (CH SEARCH) is pressed to exit the feature.
Press the red button to select each channel's freeze-frame in turn.
Press the green button to watch the selected channel, exiting the feature.
Press the blue button to watch the current programme (displayed centre screen), exiting the feature.





Channel search

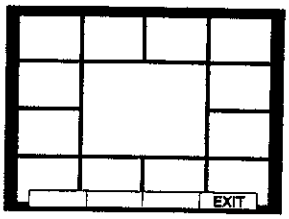
Picture and text (No indication for TC-29P250H and TC-34P250H)
Press TV/TEXT to move between watching the current programme, viewing teletext and the **picture and text** feature. **Picture and text** lets you see the current programme and a page of teletext side by side.
Whilst using this feature, the remote control affects the teletext page; if you wish to make changes to the programme viewed press TV/TEXT to return to watching the programme on its own then make the desired changes.



TELETEXT mode **Picture and text** mode

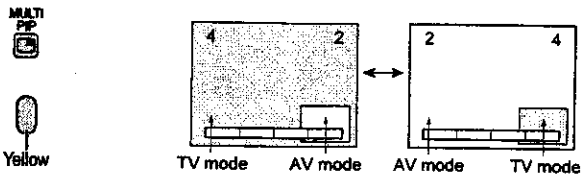
Still
Press HOLD/STILL (STILL) to freeze the picture, press again to return to watching the current programme.

Strobe
(Access **Strobe** via the **Setup** menu, see page 24). Takes a series of up to twelve freeze-frame images (one second delay between each image being taken) from the current programme watched, these are displayed in series clockwise around the edge of the screen, starting from the top left.
The current programme is displayed in the centre of the screen, still playing.
To pause (freeze) **Strobe**, press HOLD/STILL (STILL) on the remote control, press again to continue taking the freeze-frames. To exit the **Strobe** feature and return to watching the current programme, press any button on the remote control other than **STILL**.



Strobe mode

CHANGE Mode
When the CHANGE Mode is ON to Swap from Main picture to sub picture and vice versa.
A bar is displayed at the bottom of the screen when MULTI PIP is pressed. Press the yellow button to switch to Change mode.

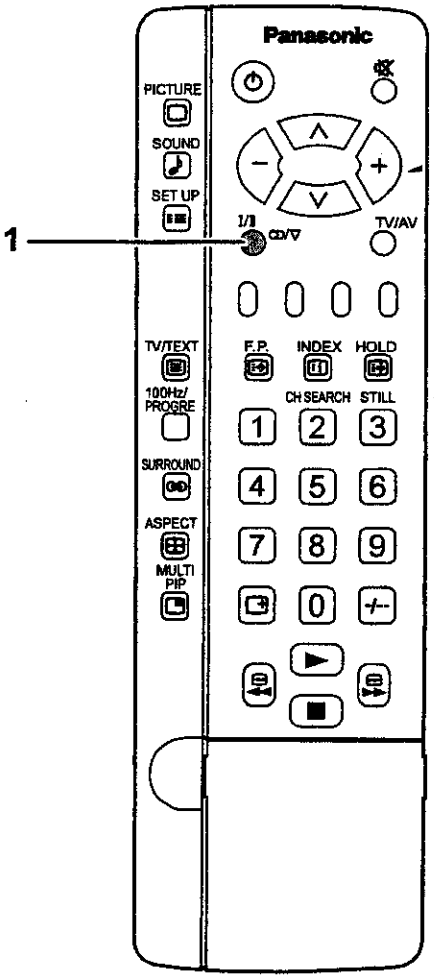


Advanced Remote Control Operation

Stereo Reception

1

When you receive the stereo/bilingual sound system, sound output modes can be selected by pressing the stereo/bilingual sound selection button.



Audio Signal	Mode Indicator
STEREO	◯◯
MAIN I	I
SUB II	II
MONO	▽

	Type of broadcast	Mode Indicator
NICAM	Regular broadcast (Standard Audio)	No Indicator ⟷ ▽
NICAM	Regular + NICAM MONO I (MAIN I)	I ⟷ ▽
NICAM	NICAM STEREO	◯◯ ⟷ ▽
NICAM	NICAM DUAL MONO (MAIN I / SUB II)	I → II, ▽
A2 (German)	Regular broadcast (Standard Audio)	No Indicator ⟷ ▽
A2 (German)	BILINGUAL or DUAL MONO : MAIN I / SUB II	I ⟷ II
A2 (German)	STEREO	◯◯ ⟷ ▽

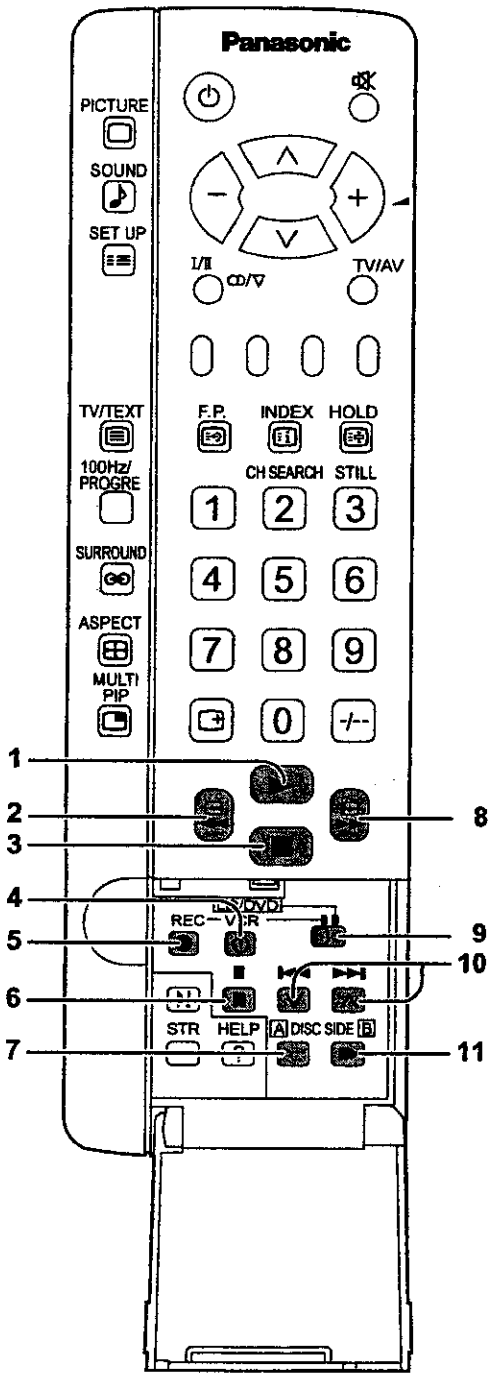
Notes:

- The "A2 (German)" stereo/bilingual TV sound transmission system is used in the following region; Australia, Malaysia, Thailand, Indonesia, etc.
  The "NICAM" stereo TV sound transmission system is used in the following region; New Zealand, Singapore, China.
- If the stereo signal is poor or the receiving conditions are not optimum or if STEREO:MONO automatic switching occurs, it is recommended you switch from STEREO to MONO.
- Even when the contents of the receiving signal undergo changes, selection mode is kept intact.
- When the receiving conditions dereriorate, listening will be easier if the mode is set to the "MONO" position, using the stereo/bilingual sound selection button.
- "DUAL", also known as "DUAL MONO" or as "BILINGUAL" is not currently transmitted in some countries.

Advanced Remote Control Operation

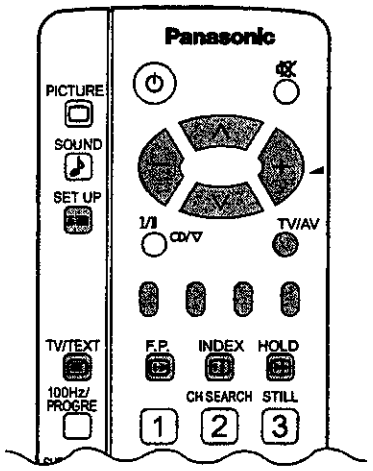
VCR / LD / DVD

The Remote Control is capable of operating some functions of selected Panasonic VCRs, LD and DVD (Digital Versatile Disc) equipment. Some VCR, LD and DVD equipment have different functions. So to ensure compatibility please refer to the equipment's instruction book or consult your dealer for details.



Button		Function	
		VCR	LD/DVD
1		Play button	
2		Rew (Rewind)/Review button	
3		Stop button	
4	LD/DVD VCR	VCR Power button	LD/DVD Power button
5	REC	REC (Record) button	
6		Pause/Still button	
7	A DISC		DISC SIDE A Selection button
8		FF (Fast Forward)/Cue button	
9		VCR/LD, DVD Select button	
10		Programme Number Up and Down buttons for VCR	Programme Skip button
11	SIDE B	Still Advance button	DISC SIDE B Selection button

TELE TEXT (No indication for TC-29P250H and TC-34P250H)



- Teletext features may vary depending on the Broadcasting Companies and is only available if the channel selected is transmitting Teletext.
- Pressing the Picture button whilst in Teletext operation will display the contrast function with a cyan bar, press ◄ or ► to alter the setting as required.
  Pressing the Setup button whilst in Teletext operation will display special function options at the bottom of the screen.
- When in Teletext mode, the volume may still be altered to the desired listening level.

What is LIST mode?
In LIST mode, four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory.

What is FASTEXT?
In FASTEXT mode, four differently coloured subjects are situated at the bottom of the display. To access more information about one of these subjects, press the appropriately coloured button. This facility enables fast access to information on the subjects shown.

Note:
- Characters will be illegible unless you select the Text Language which matches the text being received. Select the correct LANGUAGE (Refer to page 23).

TV/TEXT

TV / Teletext mode
Press TV/TEXT to switch between the current programme, teletext and the picture and text feature (lets you see the current programme and teletext side by side, see page 30).

Page Selection
Pages can be selected in two ways:
a. Press ∧ or ∨ to increase or decrease the page number by one.
b. By entering the page number, using 0 -9 on the remote control.

SET UP
Green

Full / Top / Bottom
Press SET UP to display special functions, followed by the **Green** button.
Press the **Green** button again to expand the BOTTOM half.
Press again to return to normal (FULL) size.

SET UP
Red

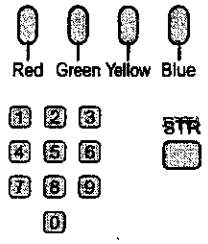
Reveal
Press SET UP to display special functions, followed by the **Red** button to reveal hidden words e.g. quiz page answers. Press again to hide.

Red Green Yellow Blue

Red / Green / Yellow / Blue buttons
In FLOF mode these correspond to the differently coloured subjects.
In LIST mode they correspond to the differently coloured page numbers.

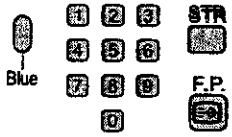
Advanced Remote Control Operation

It is not possible to change the programme position when in News flash, Update or Sub Coded Page Access operation.



List Store
In LIST mode the four page numbers can be altered (programme positions 1 - 25 only). To do this, press one of the four coloured buttons and enter the new page number.
Press and hold STR, the page numbers will change to white indicating that the page is stored.

Hold
To hold the Teletext page when viewing multi-page information
Press again to return to automatic page update.



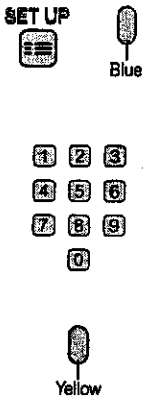
Favourite Page (F.P.)
Stores a favourite page in memory for instant recall. To store such a page, the TV must be in LIST mode, and the programme position must be from 1 - 25.
Press the **Blue** button, select the page number, then press and hold STR.
The page number is now stored.
Press F.P. to recall this page.

Update Display
Press SET UP to display special functions, followed by the **Yellow** button to view the TV picture whilst searching for a Teletext page (this is not necessary in picture and text mode, as the picture is displayed on the left of the screen).
When found, the screen will display the page number at the top left.
Press the **Yellow** button to view the page.
Press TV/TEXT again to return to normal TV operation.

News Flash
When a news flash page has been selected, press SET UP, **Yellow**, to view the TV picture. When an update is received, the page number will be displayed on screen.
Press the **Yellow** button to display the News Flash.
Press TV/TEXT to return to normal TV operation.

Update
Press SET UP, **Yellow** to see the update of information on certain pages.
When an update is received, the page number will be displayed at the top left of the screen.
Press the **Yellow** button to view the page.
Press TV/TEXT to return to normal TV operation.

Index
When in FLOP operation
Press INDEX to return to the main index page.
Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.



Sub Coded Page Access

When Teletext information exceeds more than one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require. It is possible to enter your required sub page and continue watching the normal programme until the correct sub page is found.

Select the required page number using buttons 0 - 9.

If the top of the page indicates that sub pages are being transmitted yet the page does not change, then the number at the top of the page is there to indicate that the broadcaster has updated the page's contents, there are no sub pages.

Press SET UP followed by the **Blue** button; T**** will be displayed at the top right of the screen.

Enter desired sub page number before the T"" disappears. To select page 6 enter 0, 0, 0 and 6. (if in LIST mode, a 'T' will appear in the current box at the bottom).

Press the **Yellow** button to view a normal TV programme - this is not necessary in picture and text mode, as the picture is displayed on the left of the screen. (Press SET UP, **Yellow** in LIST mode).

When the page is available, press the **Yellow** button to view the page.

To clear the page perform one of the following:

- Press SET UP.
- Select a new page number.
- Press TV/TEXT to return to normal TV operation.

Channel Allocation

- CATV (USA CATV) channel numbers as recommended by the joint EIA/NCTA Engineering committee and published as EIA INTERIM STANDARD No.6-CABLE TELEVISION CHANNEL IDENTIFICATION PLAN-MAY 1983.
- The receiving channels are as follows;

SYS SELECT	CHINA	HK/UK	ASIA/M.E	NZ/INDONES	AUSTRALIA	E.EUROPE	SPECL VER	AMERICA	CATV	JAPAN
CH DISPLAY	RECEIVE CHANNEL									
0	–	–	–	–	–	–	–	–	–	–
1	1	–	–	1	0	1	1	–	1	1
2	2	–	2	2	1	2	2	2	2	2
3	≀	–	≀	≀	2	≀	≀	≀	≀	≀
4	≀	–	≀	≀	3	≀	≀	≀	≀	≀
5	≀	–	≀	≀	4	≀	≀	≀	≀	≀
6	≀	–	≀	≀	5	≀	≀	≀	≀	≀
7	≀	–	≀	≀	S2	≀	≀	≀	≀	≀
≀	≀	–	≀	≀	≀	≀	≀	≀	≀	≀
11	≀	–	11	11	≀	11	11	≀	≀	≀
12	12	–	12	–	≀	12	12	≀	≀	12
13	13	–	–	–	≀	–	13	13	≀	13
14	≀	–	–	–	≀	–	–	14	≀	≀
15	≀	–	–	–	S10	–	–	≀	≀	≀
16	≀	–	–	–	6	–	–	≀	≀	≀
≀	≀	–	–	–	≀	–	–	≀	≀	≀
19	≀	–	–	–	9	–	–	≀	≀	≀
20	≀	–	–	–	9A	–	–	≀	≀	≀
21	≀	21	21	21	10	21	21	≀	≀	≀
22	≀	≀	≀	≀	11	≀	≀	≀	≀	≀
23	≀	≀	≀	≀	12	≀	≀	≀	≀	≀
24	≀	≀	≀	≀	S11	≀	≀	≀	≀	≀
≀	≀	≀	≀	≀	≀	≀	≀	≀	≀	≀
28	≀	≀	≀	≀	≀	≀	≀	≀	≀	≀
≀	≀	≀	≀	≀	≀	≀	≀	≀	≀	≀
57	57	≀	≀	≀	S44	≀	≀	≀	≀	≀
58	–	≀	≀	≀	20	≀	≀	≀	≀	≀
59	–	≀	≀	≀	21	≀	≀	≀	≀	≀
≀	–	≀	≀	≀	≀	≀	≀	≀	≀	≀
62	–	62	62	62	≀	62	62	62	62	62
63	–	63	63	63	≀	63	63	63	63	C13
≀	–	≀	≀	≀	≀	≀	≀	≀	≀	≀
69	–	69	69	69	≀	69	69	69	≀	≀
70	–	–	–	–	≀	–	–	–	≀	≀
≀	–	–	–	–	≀	–	–	–	≀	≀
73	–	–	–	–	≀	–	–	–	≀	≀
74	–	S'1	S'1	S'1	≀	S'1	S'1	–	≀	≀
75	–	S'2	S'2	S'2	≀	–	S'2	–	≀	≀
76	–	S'3	S'3	S'3	≀	–	S'3	–	≀	≀
77	–	–	–	–	≀	–	–	–	≀	≀
78	–	–	–	–	≀	–	–	–	≀	≀
79	–	–	–	–	≀	–	–	–	≀	≀
80	–	S1	S1	S1	≀	S1	S1	–	≀	≀
81	Z1	S2	S2	S2	≀	S2	S2	–	≀	≀
≀	≀	≀	≀	≀	≀	≀	≀	–	≀	≀
89	Z9	S10	S10	S10	≀	S10	S10	–	≀	≀
90	Z10	S11	S11	S11	≀	S11	–	–	≀	≀
91	Z11	S12	S12	S12	≀	S12	–	–	≀	≀
92	Z12	S13	S13	S13	≀	S13	–	–	≀	≀
93	Z13	S14	S14	S14	≀	S14	S14	–	≀	≀
94	Z14	S15	S15	S15	≀	S15	S15	–	≀	≀
95	Z15	S16	S16	S16	≀	S16	S16	–	≀	≀
96	Z16	S17	S17	S17	≀	S17	S17	–	≀	≀
97	Z17	S18	S18	S18	≀	S18	S18	–	≀	≀
98	Z18	S19	S19	S19	≀	S19	S19	–	≀	≀
99	Z19	S20	S20	S20	≀	S20	S20	–	99	C49
100	Z20	S21	S21	S21	≀	S21	S21	–	100	–
≀	≀	≀	≀	≀	≀	≀	≀	–	≀	–
117	Z37	≀	≀	≀	≀	≀	≀	–	≀	–
118	–	≀	≀	≀	80	≀	≀	–	≀	–
≀	–	≀	≀	≀	–	≀	≀	–	≀	–
120	–	S41	S41	S41	–	S41	S41	–	≀	–
≀	–	–	–	–	–	–	–	–	≀	–
125	–	–	–	–	–	–	–	–	125	–

Specifications

<table>
<tr><td>Power Source</td><td>TX-29P250X
AC Auto 110-240 V, 50/60 Hz

TX-68P250Z, TX-80P250Z
AC Auto 230-240 V, 50 Hz

TC-29P250H, TC-34P250H
AC Auto 220 V, 50 Hz</td></tr>
<tr><td>Power Consumption</td><td>TX-29P250X TX-68P250Z TC-29P250H
209 W
Stand-by condition 3.0 W

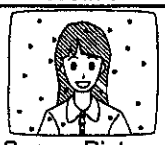
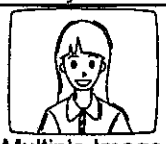
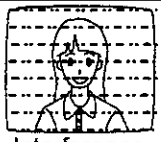
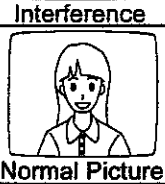
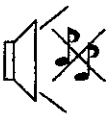
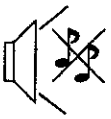
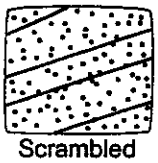
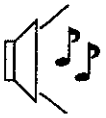
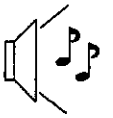
TX-80P250Z, TC-34P250H
218 W
Stand-by condition 3.0 W</td></tr>
<tr><td>Receiving System</td><td>
<table>
<tr><th colspan="2">21 Systems</th><th>Function</th></tr>
<tr><td>1
2
3
4
5
6
7</td><td>PAL B, G, H
PAL I
PAL D, K
SECAM B, G
SECAM D, K
SECAM K1
NTSC M (NTSC 3.58/4.5 MHz)</td><td rowspan="2">Reception of broadcast transmissions and Playback from Video Cassette Tape Recorders</td></tr>
<tr><td>8
9
10
11
12
13
14</td><td>NTSC 4.43/5.5 MHz
NTSC 4.43/6.0 MHz
NTSC 4.43/6.5 MHz
NTSC 3.58/5.5 MHz
NTSC 3.58/6.0 MHz
NTSC 3.58/6.5 MHz
SECAM I</td><td>Playback from Special VCR's</td></tr>
<tr><td>15
16
17
18
19
20
21</td><td>PAL 60 Hz/5.5 MHz
PAL 60 Hz/6.0 MHz
PAL 60 Hz/6.5 MHz
SECAM 60 Hz/5.5 MHz
SECAM 60 Hz/6.0 MHz
SECAM 60 Hz/6.5 MHz
NTSC 50 Hz/4.5 MHz</td><td>Playback from Special Disc Players and Special VCR's</td></tr>
</table>
</td></tr>
<tr><td>Receiving Channels</td><td>Regular TV
VHF BAND
2-12 (PAL/SECAM B, K1)
0-12 (PAL B AUST.)
1-9 (PAL B N.Z)
1-12 (PAL/SECAM D)
1-12 (NTSC M Japan)
2-13 (NTSC M U.S.A)

UHF BAND
21-69 (PAL G, H, I/SECAM G, K, K1)
28-69 (PAL B AUST.)
13-57 (PAL D, K)
13-62 (NTSC M Japan)
14-69 (NTSC M U.S.A)

CATV
S1-S20 (OSCAR)
1-125 (U.S.A CATV)
C13-C49 (JAPAN)
S21-S41 (HYPER)
Z1-Z37 (CHINA)
5A,9A (AUST.)</td></tr>
<tr><td>Receiving Stereo System</td><td>NICAM I , NICAM B/G, NICAM D, A2 (German)</td></tr>
</table>

Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms		Checks
Picture	**Sound**	
 Snowy Picture	Noisy Sound	Aerial Location, direction or Connections
 Multiple Image	Normal Sound	Aerial Location, direction or Connections
 Interference	Noisy Sound	Electrical Appliances Cars/Motorcycles Fluorescent Lamps
 Normal Picture	 No Sound	Volume (Check whether the mute function has been activated on the Remote Control.)
No Picture	 No Sound	Not plugged into AC outlet Not switched on Contrast and Brightness/Volume setting (Check by pressing the Power Switch or Stand-by Button on the Remote Control.)
No Colour	Normal Sound	Colour Control
 Scrambled	 Normal or Weak Sound	Retune Channels
Coloured Patches	 Normal Sound	Magnetic interference from unshielded equipment; TV set moved while "ON". Turn the TV set off for 30 minutes, using the "Power" Switch on the TV set.
No Colour	Noisy Sound	Sound Menu (Refer to page 20) Picture Menu (Refer to page 18)

Specifications

Tuning System	Frequency synthesizer Auto Search Tuning	POSITION DIRECT	: 100 Position : 125 Position
Picture Tube		TX-29P250X, TX-68P250Z TC-29P250H	TX-80P450Z, TC-34P250H
	Overall Picture tube measured diagonally	72 cm	86 cm
	Viewable Picture tube measured diagonally	68 cm	80 cm
	CRT Deflection	104°	104°
Audio Output	64 W [2-way, 4-speakers ; 12 W + 12 W, AFB woofer ; 12 W] (10 % THD)		
Headphones	3.5 mm Plug		
Aerial Impedance	75 Ω Unbalanced coaxial		
Video/Audio/Component Terminals	AV 1, 2, 3, 4	S-Video In	Y:1 Vp-p, 75 Ω C:0.3 Vp-p, 75 Ω
		DVD(Y/P_B/P_R)	
		Video In	1 Vp-p, 75 Ω
		Audio In	Approx. 0.4V 47K Ω
	Monitor Out	Video Out	1 Vp-p, 75 Ω
		Audio Out	Approx. 0.4V 1K Ω
	AV1 IN(Rear) : S-Video, Video, Audio L/R terminals AV2 IN(Rear) : Video or Y/P_B/P_R, Audio L/R terminals AV3 IN(Front) : S-Video, Video, Audio L/R RGB terminals AV4 IN(Rear) : Video or Y/P_B/P_R, Audio L/R terminals		
RGB input	High-DENSITY D-sub 15pin 31.5 kHz / 60 Hz (640 × 480 dot) and 31.5 kHz / 70 Hz (640 × 400 dot)		
Remote control Transmitter	EUR511226 ····· TX-29P250X, TX-68P250Z, TX-80P250Z EUR511227 ····· TX-29P250H, TX-34P250H R6 (AA) Battery × 2 75 Ω coaxial aerial plug		
Dimensions (W × D × H)	TX-29P250X, TX-68P250Z, TC-29P250H 652 mm × 517 mm × 612 mm	TX-80P250Z, TC-34P250H 762 mm × 558 mm × 706 mm	
Weight (Mass)	TX-29P250X, TX-68P250Z, TC-29P250H 53 kg (Net)	TX-80P250Z, TC-34P250H 74 kg (Net)	

Note:

• Design and Specifications are subject to change without notice. Weight and Dimensions shown are approximate.

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Customer's Record
The model number and serial number of this product can be found on its cabinet. You should note this serial number in the space provided below and retain this book plus your purchase receipt as a permanent record of your purchase to aid in identification in the event of theft or loss and for Warranty Service purposes.

Model Number _____ Serial Number _____

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